

ACCESSION NR: AP4026421

S/0055/64/000/002/0083/0096

AUTHOR: Borisenok, I. T.

TITLE: Control system with redundancies

SOURCE: Moscow. Universitet. Vestnik. Seriya 1. Matematika, mekhanika, no. 2, 1964, 83-96

TOPIC TAGS: control system, redundancy, reliability, nondamping steady-state oscillation, follower system, defective redundant element, gyroscopic platform, control channel, stability, synchronous motion

ABSTRACT: For guaranteeing high reliability in certain control systems, redundancy is used. In such control systems there may arise nondamping steady-state oscillations of rather high amplitude. It is also interesting to study oscillations of systems with defective redundant elements. The author investigates oscillations and the conditions under which they arise in control systems with properly operating and faulty redundant elements. He considers the cases where the characteristics of the redundant elements are linear and nonlinear. Under certain condi-

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ACCESSION NR: AP4026421

tions on the coefficients, a linear control system with properly operating redundant elements may attain periodic motion, and the motion of the elements of control becomes synchronous in the course of time. If the rudder is deviated to the opposite side, the oscillation amplitude increases. A nonlinear control system with properly operating redundant elements may have periodic motion under a certain condition, and the small values of the zone of insensitivity of the characteristics of the redundant elements have little effect on the size of instability of the amplitude of the steady-state oscillations. The region of stability of a control system with defective redundant elements decreases in comparison to the region of stability of a control system with properly operating elements. The introduction of control by a derivative with the help of a transmitter of angular velocities of a differentiating correcting contour of prediction makes it possible to decrease considerably the amplitude of steady-state oscillations. In a nonlinear control system, the amplitude of the steady-state oscillations of the object decreases as the number of broken reverse relations of the redundant elements increases. "In conclusion I use this opportunity to express my gratitude to V. I. Belyakov who did part of the computations for the examples." Orig. art. has: 4 tables and 69 formulas.

Card 2/3

ACCESSION NR: AP4026421

ASSOCIATION: Kafedra prikladnoy mekhaniki (Department of Applied Mechanics)

SUBMITTED: 21Oct63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 000

Card 3/3

L 15053-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP6002144

SOURCE CODE: UR/0280/65/000/006/0019/0022

AUTHOR: Borisenok, I. T. (Moscow); Balakin, B. M. (Moscow)

ORG: none

TITLE: Control system with cold reserving

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1965, 19-22

TOPIC TAGS: automatic control, automatic control system, automatic control theory

ABSTRACT: A ¹⁴control system having both hot and cold reserve units and describable by linear or nonlinear differential equations is considered. When a break occurs in the feedback loop of one of the hot-reserve elements, the system is brought into an unstable uncontrollable state. It is suggested that distorted-signal functions be used in such a case for determining the failure and for connecting cold-reserve units in order to restore normal operation of the system. A set of linear equations that can describe the above system was studied on an analog computer; corresponding phase portraits are presented. Orig. art. has: 10 figures and 3 formulas.

SUB CODE: 13 / SUBM DATE: 22Dec64 / ORIG REF: 003

CC 09/
Card 1/1

BORISENOK, L.A.

AUTHOR: Borisenok, L. A.

75-6-7/23

TITLE: ~~Quantitative Spectrographic Determination of Gallium in Silicates, Ores and Minerals~~ (Kolichestvennoye opredeleniye galliya v silikatnykh porodakh i mineralakh spektral'nym metodom).

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1957, Vol. 12, Nr 6, pp. 704-707 (USSR).

ABSTRACT: The quantitative spectrographic determination of gallium in various silicates, ores and minerals by applying sodium chloride as "buffer" with series of standard mixtures is described. Sodium vapor decreases the volatilization temperature and eliminates the influence of other elements during volatilization. The sensitiveness for the determination of gallium is increased by this, up to 1.10^{-4} o/o, viz. ten times. The determination of gallium was carried out by means of the spectroscopic apparatus MCT-22 by using a gap of 0,005 mm. Spectrally pure carbon was used for the electrodes. The most sensitive gallium line 2943,64 A was used and the lead line 3034,1 A was employed as a comparison line. The error with gallium-quantities higher than 0,001 o/o amounts to 3 o/o and with gallium-concentrations less than 0,001 to 8 o/o.

Card 1/2

There are 5 figures, 1 table, and 11 references, 8 of which are Slavvic.

Quantitative Spectrographic Determination of Gallium in Silicates, 75-6-7/23
Ores and Minerals.

ASSOCIATION: State University imeni M. V. Lomonosov-Moscow (Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova-Moskva).

SUBMITTED: October 21, 1956.

AVAILABLE: Library of Congress.

- | | |
|-----------------------------------|-------------------------------|
| 1. Silicate-Gallium determination | 2. Ores-Gallium determination |
| 3. Minerals-Gallium determination | 4. Spectrographic analysis |

Card 2/2

SOV/7-59-1-6/14

3(8), 3(0)

AUTHOR: Borisenok, L. A.

TITLE: The Distribution of Gallium in the Rocks of the Soviet Union
(Raspredeleniye galliya v gornyykh porodakh Sovetskogo Soyuza)

PERIODICAL: Geokhimiya, 1959, Nr 1, pp 46-59 (USSR)

ABSTRACT: The article lists the results obtained by 1500 analyses of different rocks and most important rock-forming minerals of the Soviet Union. Gallium was determined by means of a spectrum analysis; the method was developed by the author (Ref 24) and checked by fluorometric (Ref 25) and colorimetric (Ref 26) analyses. The test samples for the spectrum analysis were checked by the international standard G-1, the accuracy being 10%. Aluminum and silicon were determined spectrographically by diluting the materials in zinc oxide (1:100); checks were made by wet chemical analyses of some samples. The analyses are classed according to the rock chemism: ultra-basic rocks with an average of 0.0002% Ga (Tables 1 and 2), basic rocks with 0.0015% Ga (Tables 3 and 4), intermediate rocks with 0.0016% Ga (Tables 5 and 6), acid rocks with 0.0019% Ga (Tables 7 and 8), and alkali rocks with 0.0040% Ga (Tables 9 and 10). Table 11 contains a summary organized

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The Distribution of Gallium in the Rocks of the Soviet Union SOV/7-59-1-6/14

according to the locations of deposits. Summarizingly one may say: The Ga content increases from the ultra-basic towards the acid rocks, while the Al content is approximately proportional (Fig 1). A more detailed investigation shows, however, that the Ga - Al - ratio increases as the Al_2O_3 content decreases, i.e. it increases in the direction towards acid rocks (Fig 2). A concentration of Ga in the remaining melt proves the relatively high Ga-content of the pegmatites (Table 12). Generally speaking, the distribution shows no great variations and is independent of area, age, and formation conditions. Certain unimportant regional concentrations are due to alkali rocks, alkali pegmatites, metasomatism, or the formation of greisen. There are 2 figures, 12 tables, and 29 references, 13 of which are Soviet.

ASSOCIATION: Kafedra geokhimii Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova (Chair of Geochemistry, Moscow State University imeni M.V. Lomonosov)

SUBMITTED: June 23, 1958

Card 2/2

AUTHORS: Borisenok, L. A., Tauson, L. V. SOV/7-59-2-8/14

TITLE: Geochemistry of Gallium in the Granitoids of the Susamyr Batholith (Central Tyan'-Shan') (Geokhimiya galliya v grani-toidakh Susamyrskogo batolita (Tsentral'nyy Tyan'-Shan'))

PERIODICAL: Geokhimiya, 1959, Nr 2, pp 145-151 (USSR)

ABSTRACT: From a geochemical and crystallochemical point of view, gal-lium is closely bound to aluminum in the magmatic phase; about 60-70% of gallium replace aluminum of feldspar, which con-tains from 12 to 25 g/t Ga. Other gallium concentrators are hornblende (18 g/t) and especially biotite (45-70 g/t). The distribution of Ga in the individual intrusion phases of the Susamyr batholith (Table 2) shows only insignificant variations. The average Ga content is 0.0017%. Only in granite aplites an enrichment up to 0.0022% takes place. The close geochemi-cal connection between gallium and aluminum manifests itself in the unchanging Ga/Al ratio in rocks with varying silicic acid content in the same magmatic complex. According to a diagram of Ga/Al versus SiO₂, this ratio remains virtually constant in the Susamyr batholith at a value of $0.8 \cdot 10^{-4}$. There are 1 figure, 2 tables and 2 Soviet references.

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SOV/7-59-2-8/14
Geochemistry of Gallium in the Granitoids of the Susamyr Batholith (Central
Tyan'-Shan')

ASSOCIATION: Kafedra geokhimii Moskovskogo universiteta im. M. V. Lomonosova,
i Institut geokhimii i analiticheskoy khimii im. V. I.
Vernadskogo AN SSSR, Moskva
(Chair of Geochemistry of Moscow University imeni M. V.
Lomonosov, and Institute of Geochemistry and Analytical
Chemistry imeni V. I. Vernadskiy AS USSR, Moscow)

SUBMITTED: November 13, 1958

Card 2/2

SOV/7-59-5-7/14

AUTHORS: Gerasimovskiy, V. I., Tuzova, A. M., Borisenok, L. A.,
Rasskazova, V. S.

TITLE: Gallium in the Rocks of the Lovozero Alkaline Massif (Galliy
v porodakh Lovozerskogo shchelochnogo massiva)

PERIODICAL: Geokhimiya, 1959, Nr 5, pp 449 - 454 (USSR)

ABSTRACT: Gallium was determined by the extraction with rhodamine B
without previous separation of the other elements (method
according to reference 4). The results are given in a large
table (Table 1), arranged according to the four intrusion
phases of the massif. Furthermore, the results of the spectro-
scopic gallium determination and the aluminum content are
given. The aluminum determinations were carried out by Yu. B.
Kholina. The Ga- and Al-values are given in a diagram as well.
Another table (Table 2) gives the gallium content of indivi-
dual minerals. The gallium contents fluctuate between 3 and
 $10 \cdot 10^{-3}\%$, $6 \cdot 10^{-3}\%$ is the average for the whole massif. This
is more than the usual content of the nepheline syenites. The
third intrusion phase has the highest gallium content. Gallium
is enriched in the later phases, compared to aluminum. Gallium

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Gallium in the Rocks of the Lovozero Alkaline Massif SOV/7-59-5-7/14

is able to enter into the crystal lattice for aluminum as well as for trivalent iron, e.g. in agirine. There are 1 figure, 2 tables, and 6 references, 5 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR, Moscow)

SUBMITTED: April 8, 1959

Card 2/2

3(5), 3(8)

AUTHORS:

Borisenok, L. A., Zlobin, B. I.

SOV/7-59-6-3/17

TITLE:

Gallium in the Alkali Rocks of the Massif Sandyk (Northern Kirgiziya)

PERIODICAL:

Geokhimiya, 1959, Nr 6, pp 505 - 512 (USSR)

ABSTRACT:

Altogether 50 rock specimens and 11 minerals from these rocks were investigated. The method has been developed by L. A. Borisenok (Ref 4). Table 1 shows the gallium content of the rock-forming minerals from three syenites. Table 2 gives the average contents of the individual types of rock and their surface in %. The average Ga-content of the massif is $19.3 \cdot 10^{-4}$ %, the average Ga/Al-ratio is $1.9 \cdot 10^{-4}$, fluctuates, however, between 1.2 and $2.3 \cdot 10^{-4}$. In the course of differentiation the Ga-content rises parallel with the Al-content, whereas the Fe^{+3} -content decreases (Fig). The distribution of Ga in the minerals depends on the course of precipitation. The 6-coordination is in this case apparently preferred to the 4-coordination. Amounting to $30.6 \cdot 10^{-4}$ the gallium content of the vein rocks is higher than that of the mother rock (Table 3). The authors thank L. V. Tauson for his

Card 1/2

Gallium in the Alkali Rocks of the Massif Sandyk SOV/7-59-6-3/17
(Northern Kirgiziya)

advice. There are 1 figure, 3 tables, and 10 references,
6 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernad-
skogo i Moskovskiy gosudarstvennyy universitet im. M. V. Lomo-
nosova (Institute of Geochemistry and Analytical Chemistry
imeni V. I. Vernadsky and Moscow State University imeni M. V.
Lomonosov)

SUBMITTED: December 8, 1958

Card 2/2

S/081/61/000/024/020/086
B138/B102

AUTHORS: Borisenok, L. A., Saukov, A. A.

TITLE: The geochemical cycle of gallium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 127, abstract
24G18 (Sb. "Geokhim. tsikly", M., Gosgeoltekhizdat, 1960,
41 - 51)

TEXT: The gallium concentration has been determined in 1500 specimens of different rocks and minerals by spectral analysis. Percentage Ga content and the $Ga:Al \cdot 10^{-4}$ ratio (in brackets) are: meteorites 0.0003, ultrabasic 0.0002 (1.0), basic 0.0015 (1.8) medium 0.0016 (1.9), acid 0.0019 (2.6), alkaline 0.004 (4.1). In ultrabasic rocks Ga is concentrated in pyroxenes and hornblende. In basic, medium, and acid rocks Ga is concentrated in feldspars, but sometimes an increased concentration is found in muscovite, biotite etc. In alkaline rocks it occurs in nepheline and feldspar. A high Ga-concentration is found in sodalite and cancrinite. It is noted that the same amount of Ga is found both in source rocks and rocks of the principal crystallization stage. The slight Ga-enrichment of rocks of the

Card 1/2

The geochemical cycle of gallium

S/081/61/000/024/020/086
B138/B102

vein series throws doubt on Goldschmidt's conclusion regarding the accumulation of Ga in residual magmas. In hydrothermal veins Ga concentrates in sphalerites (up to 30%), more in low than in high-temperature ones. In sedimentary rocks the average Ga concentration is 0.0015% in clays it is up to 0.005%, and in sands up to 0.001%. Ga accumulates in alkaline waters (less in marine, than in continental facies) and may even be used as an indicator; in oceanic waters Ga amounts to $5 \cdot 10^{-8}\%$. [Abstracter's note: Complete translation.] ✓

Card 2/2

BORISENOK, L. A.; SAUKOV, A. A.

"Geochemical cycle of gallium"

Paper submitted at the International Geological Congress XXI Session-
1960 (Reports of Soviet Geologists) Problem No. 1, 15-24 Aug. 61

GANEYEV, I.G.; PACHADZHANOV, D.N.; BORISENOK, L.A.

Geochemistry of gallium, tin and some other elements in the
process of greisenization. Geokhimiia no.9:757-764 '61.
(MIRA 15:2)

1. M.V. Lomonosov State University, Moscow.
(Kazakhstan--Greisen)
(Kazakhstan--Geochemistry)

BORISENOK, L.A.; RYABCHIKOV, I.D.

Gallium in minerals of micaceous pegmatites in the Tedino deposit
[with summary in English]. Geokhimiia no.1:62-66 '62. (MIRA 15:2)

1. Lomonosov State University and the Institute of Ore Deposits,
Petrography, Mineralogy and Geochemistry, Academy of Sciences
of the U.S.S.R.

(Karelia—Gallium) (Karelia—Pegmatites)

SHUMANOVA, A.^.; SOKOLOV, B.S.; CHERKASHENINA, Ye.F.; GARSKOVA,
A.I.; CHULKOV, M.P.; BORISENOK, V.G.; RAIMOVA, S.S.; KULIK,
O.A.; UDALOVA, L.I.; KAZACHKOV, S.S., otv. red.; ZHDANOVA,
L.P., red.

[Agroclimatic manual on Omsk Province] Agroklimaticheskii
spravochnik po Omskoi oblasti. Leningrad, Gidrometeoizdat,
1959. 227 p. (MIRA 17:7)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeo-
rologicheskoy sluzhby. Omskoye upravleniye. 2. Gidrometeoro-
logicheskaya observatoriya Omskogo upravleniya gidrometeorologicheskoy
sluzhby (for all except Kazachkov, Zhdanova).

BUDNITSKAYA, Ye. V.; BORISEVA, I.G.; PASYNSKIY, A.G.

Ionizing radiation effect on the activity of lipoxidase in shoots
of various plants. Dokl. AN SSSR 120 no. 1:140-143 My-Je '58.
(MIRA 11:7)

1. Institut biokhimii im. A.N.Bakha AN SSSR. Predstavleno akademikom
A.I. Oparinyam.

(Lipoxidaze)
(Plants, Effect of radioactivity on)

SOV/84-58-10-49/54

AUTHOR: Borisevich, A., Chief Engineer, Syktyvorskaya Aviation Unit

TITLE: Valuable Proposals Rejected (Otklonyayutsya tsennyye predlozheniya)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 10, p. 39 (USSR)

ABSTRACT: The author claims that proposals made by the technical personnel of the Syktyvorskaya Aviation Unit to improve shortcomings in the design and construction of Mi-4 and Mi-1 helicopters and Yak-12 were rejected by the Mil' designers' office and the plant producing the aircraft. A description of the proposals is given.

ASSOCIATION: Syktyvorskaya aviagruppa (Syktyvorskaya aviation unit)

Card 1/1

BORISEVICH, A. I. --"Certain Anatomical and Roentgenoanatomical Peculiarities of the Pelvis and Last Lumbar Vertebra which Merit the Attention of the Clinician." *(Dissertation For Degrees In Science And Engineering Defended At USSR, Higher Educational Institutions). (34). First Leningrad Medical Inst imeni Academician I. P. Pavlov, Leningrad, 1955

SO: Knizhnaya Letopis' No. 34, 20 August 1955

* For the Degree of Doctor of Medical Sciences

BORISEVICH A.I.

USSR/Morphology of Man and Animals. The Skeleton.

S-3

Abs Jour : Ref Zhur - Biol., No 5, 1958, No 21766

Author : Borisovich, A.I.

Inst : Not Given

Title : Accessory Sacroiliac Joint According to Materials of the
Medical Department (A Preliminary Communication).

Orig Pub : Tr. Kafedry norm. anatomii. Saratovsk. med. in-t, 1955, VYP.
1, 138-146.

Abstract : Accessory sacroiliac joints were found; in 27 (16.4%) of 165 cases studied; they were bilateral in 19 cases. Accessory articular surfaces in the sacrum were located most often at the level of the two upper posterior sacral foramina and in the ilium - near the upper posterior spine; variations of the joint locations were described. The shape of the accessory joints' surfaces was quite variable. The transverse and longitudinal diameters varied from 3 mm. to 24 mm. The plane of the accessory joint did not correspond to the sagittal (plane) but formed an angle with the plane of the main

Card : 1/2

3

USSR/Morphology of Man and Animals. The Skeleton.

S-3

Abs Jour : Ref Zhur - Biol., No 5, 1958, No 21766

sacroiliac articulation. Accessory articulation probably creates conditions contributing to early senescence of the sacroiliac joint; arthrosis deformans which was revealed in 23 cases coincided with the presence of accessory joints on 20 occasions.

Card : 2/2

BORISEVICH, A.I. (Saratov, Kommunarnaya ul., d.3, kv.1)

Variability in the relief of the posterior surface of the
sacrum. Arkh.anat.gist. i embr. 37 no.7:94-96 J1 '59.
(MIRA 12:10)

1. Kafedra normal'noy anatomii (zav. - prof.V.I.Bik) Saratov-
skogo meditsinskogo instituta.
(SACRUM, anatomy & histology)

BORISEVICH, A.I.

Some characteristics of the growth and development of the human spinal column in terminal stages of differentiation. Arkh. anat., gist. i embr. 48 no.6:50-63 Je '65. (MIRA 18:7)

1. Kafedra normal'noy anatomii (zav. - prof. V.I.Bik) Saratovskogo gosudarstvennogo meditsinskogo instituta imeni akademika Pavlova.

5(4)

AUTHORS:

Borisevich, A. N., Miskidzh'yan, S. P.

SOV/76-33-4-14/32

TITLE:

Investigation of the Constant of Electrolytic Dissociation of Allyl-o-toluidine Thiocyanate in Water-Alcohol Solutions (Issledovaniye konstanty elektroliticheskoy dissotsiatsii rodanistovodorodnogo allilortotoluidina v vodnospirovnykh rastvoritelyakh)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 840-843 (USSR)

ABSTRACT:

One of the authors synthesized a number of allyl thiocyanates (Refs 1, 2) which proved to be bactericidal and hypotensive substances. Since these substances are electrolytes it may be assumed that their above-mentioned properties are due to the ions into which they decompose. For this reason the dissociation constant (DC) of allyl aniline thiocyanate was determined already in various nonaqueous solvents (Ref 3). In the present case the (DC) of allyl-o-toluidine-thiocyanate (I) was determined in water (W), water-alcohol mixtures (WA) and absolute ethanol (E). These measurements are of importance also because the quantitative determinations of the allyl aminothiocyanates take place colorimetrically in (WA). The (DC) was measured according to the method of electrical conductivity and determin-

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SOV/76-33-4-14/32
Investigation of the Constant of Electrolytic Dissociation of Allyl-*o*-toluidine Thiocyanate in Water-Alcohol Solutions

ed by means of a normal Kohlrausch-bridge. The measurement results of the specific electrical conductivity of (I) in (W) (Table 1), in 50% (A) (Table 2), 90% (A) (Table 3), and absolute (A) (Table 4), show that the (DC) of (I) decreases with dilution of (A) (Table 5) i.e. the (DC) of (I) is reversely proportional to the (DC) of the medium. This deviation from the Nernst-Tomson rule (Ref 7) is explained by the formation of a new chemical compound between the dissolved substance and the solvent which rarely occurs in (WA) and which requires further investigations. There are 5 tables and 6 references, 7 of which are Soviet.

ASSOCIATION: L'vovskiy meditsinskiy institut (L'vov Medical Institute)

SUBMITTED: September 20, 1957

Card 2/2

BORISEVICH, A.N.; GRABENKO, A.D.; PEL'KIS, P.S.

Aryl amides of substituted thioacetic acid. Part 1: Aryl amides
of acetylthioacetic acid and their derivatives. Zhur.ob.khim.
33 no.7:2223-2227 J1 '63. (MIRA 16:8)

1. Institut organicheskoy khimii AN UkrSSR.
(Acetic acid) (Acetamide)

BORISEVICH, A.N.; FEL'KIS, P.S.

Arylamides of substituted thioacetic acid. Part 2: Cyclization of
arylamides of arylazoacetylacetic acid. Zhur. org. khim. 1 no.6:
1052-1054 Je '65. (MIRA 18:7)

1. Institut organicheskoy khimii AN UkrSSR.

BORISEVICH, A.N.; PEL'KIS, P.S.

Cyclization of 2,3,4-pentantrione 3-arylhydrazones. Zhur.
org. khim. 1 no.7:1297-1299 JI '65.

1. Institut organicheskoy khimii AN UkrSSR.

(MIRA 18:11)

BORISEVICH, A.S.

New buried anticlinal zone in the platform flank of the Ciscaucasian trough. Geol.nefti i gaza 3 no.8:36-39 Ag '59
(MIRA 12:11)

1. Trest Grozneftegeofizika.
(Caucasus, Northern--Geology, Structural)

ACC NR: AP6023580

SOURCE CODE: UR/0409/66/000/003/0368/0371

AUTHOR: Borisovich, A. N.; Shulezhko, S. A.; Pel'kis, P. S.

ORG: Institute of Organic Chemistry, Academy of Sciences, UkrSSR
(Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Arylamides of substituted thioacetic acid. III. Cyclization of arylamides of acetylthioacetic acid

SOURCE: Khimiya geterotsiklicheskikh soedineniy, no. 3, 1966, 368-371

TOPIC TAGS: acetylmethylenearylphenylthiazoline, acetylmethylene-arylthiazolidone, *cyclization, acetic acid*

ABSTRACT:

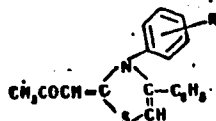
Previously unreported 2-(acetylmethylene)-3-aryl-4-phenylthiazolines I-V (see Table 1) were obtained by boiling an equimolar mixture of arylamides of acetylthioacetic acid with *o*-bromoacetophenone in ethanol and separation on a chromatographic column packed with Al_2O_3 . Reactions

Card 1/3

UDC: 547.292+542.952.52

ACC NR: AP6023580

Table 1. 2-(acetylmethylene)-3-aryl-4-phenylthiazolines



Compound no.	R	T. mp., °C	Formula	Found s. %	Calculated s. %	Yield %
I	H	215—216	C ₁₈ H ₁₅ NOS*	11.03; 11.04	10.95	52
II	p-CH ₃	158—159	C ₁₉ H ₁₇ NOS	10.26; 10.23	10.43	50
III	p-OCH ₃	145—146	C ₁₉ H ₁₇ NO ₂ S	9.80; 9.77	9.90	52
IV	o-OCH ₃	(Decomp.) 192—194	C ₁₉ H ₁₇ NO ₂ S	9.98; 9.98	9.90	48
V	p-OC ₂ H ₅	132—133	C ₂₀ H ₁₉ NO ₂ S	9.34; 9.28	9.48	53

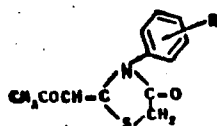
* Found: C 73.79; 73.72; H 5.01; 5.03; N 4.99; 5.09%; M 292.4. Calculated: C 73.65; H 5.14; N 4.77%; M 293.36.

of arylamides of acetylthioacetic acid with monochloroacetic acid in the presence of anhydrous sodium acetate in glacial acetic acid yielded the previously unreported 2-(acetylmethylene)-3-aryl-4-thiazolidones:

Card 2/3

ACC NR: AP6023580

Table 2. 2-(acetylmethylene)-3-aryl-4-thiazolidones



Compound no.	R	T. mp., °C	Formula	Found s, %	Calculated s, %	Yield %
VI	H	204—206	C ₁₁ H ₁₁ NO ₂ S	13.46; 13.45	13.75	36
VII	p-CH ₃	200—202	C ₁₂ H ₁₃ NO ₂ S	12.86; 12.87	13.01	43
VIII	p-OCH ₃	201—202	C ₁₃ H ₁₃ NO ₃ S	11.95; 12.02	12.19	43
IX	o-OCH ₃	145—146	C ₁₃ H ₁₃ NO ₃ S	12.18; 12.26	12.19	40
X	p-OC ₂ H ₅	163—164	C ₁₅ H ₁₅ NO ₃ S	11.64; 11.63	11.56	50

• Found: C 63.36; 63.32; H 5.31; 5.27; N 6.01; 6.03%; M 256.9. Calculated: C 63.13; H 5.29; N 5.66%; M 247.32.

Orig. art. has: 2 tables.

[W.A.50; CBE No. 10]

SUB CODE: 07/ SUBM DATE: 04Jan65/ ORIG REF: 002/ OTH REF: 006

Card 3/3

-BORISEVICH, A.S.

Seismic prospecting in the area of the gravity anomaly in the trans-Terek Plain. Geol. nefiti i gaza 4 no.10:52-53 O '60. (MIRA 13:9)

1. Trest Grozneftegeofizika.
(Terek Valley--Seismic prospecting)

BORISEVICH, D. V.

BORISEVICH, D. V. "The geomorphology and history of development of the topography of the basin of the central and lower course of the Chusovaya River", Trudy In-ta geogr. i (Akad. nauk SSSR), Issue 39, 1948, p. 40-51.

SO: U 3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No.7 1949).

BORISEVICH, D.V.

Practice in the genetic classification of relief forms.
Uch. zap. MGPI 120:43-56 '58. (MIRA 16:8)

BORISEVICH, D.V.

Penepplain surfaces of Central and Southern Urals and conditions
of their formation. Vop.geog. 36:182-206 '54. (MIRA 8:4)
(Ural Mountains)

BORISEVICH, D.V.

L.C.King's article "The study of the world's planinlands; a new approach in geomorphology" [in English] (The Quaterly Journal of the Geological Society of London, v.106, part 1, 1950). Vop. geog.36:257-258 '54. (MLRA 8:4)
(Physical geography)

ACC NR: AT6022490

(A)

SOURCE CODE: UR/0000/65/000/000/0019/0027

AUTHOR: Borisevich, D. V.

ORG: none

TITLE: Principles of designing legends for geomorphological maps. The generalization problem

SOURCE: AN SSSR. Otdeleniye nauk o Zemle. Geomorfologicheskaya komissiya. Metodika geomorfologicheskogo kartirovaniya (Methods of geomorphological mapping). Moscow, Izd-vo Nauka, 1965, 19-27

TOPIC TAGS: cartography, geomorphology, tectonics

ABSTRACT: The author discusses legends for geomorphological maps and stresses the need for standardization on the national level. Until recently, geomorphologic cartography has mainly been based on the so-called "morphogenetic" principle. Such maps show only those relief features which have common origin and history. The new mode of mapping (Borisevich, 1950) depicts surfaces of different ages, origins or geomorphological quality. The distinction between the older morphogenetic and the new morphochronogenetic modes of presentation has become evident in the preparation of maps for engineering purposes. Through a judicious use of symbols and colors, it is possible to convey the required information without crowding the map with symbols. The method is

Card 1/2

ACC NR: AT6022490

applicable to both small scale maps (e. g., 1:500,000) as well as to the large scale maps. Generalization of data for presentation on the small scale maps is accomplished either by omitting minor details or combining them into groups. Generalization of exogenous forms of relief, which are identical but vary in age, involves showing form complexes instead of individual forms, e. g., terrace complexes instead of individual terraces. Generalization of exogenous forms, which are of the same age and of similar genesis should be done with a view to clarity, e. g., streams should be grouped as permanent or intermittent. Generalization of features, which are different in age and origin, is the most difficult and should be avoided if possible. The generalization of elements of geotectonic formations is accomplished by means of contours of red color. The generalization of re-built elements of relief involves black cross-hatching superimposed onto the color symbols. The author obtained good results when he applied this technique to cartographic work in the Caucasus.

SUB CODE: 08/ SUBM DATE: 24Sep65/ ORIG REF: 006

Card 2/2 *hh*

BORISEVICH, D.V.

Two types of geomorphological maps (concerning K.F. Leont'yev's article "Relief classification and its reflection in the legends of geomorphological maps"). Izv. AN SSSR. Ser. geog. no. 1:129-131 Ja-F '66 (MIRA 19;2)

BORISEVICH, I. M.

Serradella

Introducing serradella on the collective farm. Sots. zhiv., 14, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Uncl.

BORISEVICH, I. M.

Peat

Collective farm work practice in preparing and using peat for fertilizer. Dost.sel'khoz.
No. 2, 1953.

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

BORISEVICH, Ivan Mikhaylovich

[Forage lupine and its cultivation] Karmavy lubin i vopyt iaho
vyroshchvannia. Minsk, Dziarzh.vyd-va BSSR, 1958. 67 p.
(Lupine) (MIRA 12:3)

DORIDBYCH, I. V.

"On the Genesis of the Mazul Manganese Deposit," Dokl. Ak. Nauk SSSR, vol. 26, no. 8, 1940

F. V.
Inst. Petrography, im_Λ Levinson-Lessing, Acad. Sci. USSR

BORISEVICH, I. V.

PA 68T93

USSR/Minerals - Dehydration
Minerals, Synthetic

May 1948

"Tensimetry of Synthetic Hydrargillite," I. V.
Borisevich, Inst Geol Sci, Acad Sci USSR, 2 $\frac{1}{2}$ pp

"Dok Ak Nauk SSSR" Vol LX, No 5

In 1947 F. V. Syromyatnikov discovered an apparatus for dehydrating minerals in a vacuum. Synthetic hydrargillite used to determine constants of this equipment. At the same time it was possible to study endothermic effect on hydrargillite. Describes tensimetric method for studying small amounts of hydrates, particularly synthetic hydrargillite. Submitted by Academician D. S. Belyankin 17 Mar 1948.

68T93

BORISEVICH, I.V.

Tensimetry of artificial hydrargillite. Dokl. AN SSSR 60 no.5:
861-863 My '48. (MLRA 10:8)

1. Institut geologicheskikh nauk Akademii nauk SSSR. Predstavleno
akademikom D.S. Belyankinym.
(Gibbsite) (Vapor pressure)

BORISEVICH, I.V., inzhener.

Microscopic study of coal dust intended for preparation. Nauch.rab.
VUGI no.9:86-97 '53. (MLRA 7:6)

1. Geologo-petrograficheskaya laboratoriya. (Coal--Analysis)

ADANAS'YEV, G.D.; BORISEVICH, I.V.; SHANIN, L.L.

Geological interpretations of radiological data in connection with absolute age determinations. Izv. AN SSSR. Ser.geol. 27 no.1:26-40 Ja '62. (MIRA 15:1)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.

(Geological time)

AFANAS'YEV, G.D.; BORISEVICH, I.V.; SHANIN, L.L.; SHEINA, I.P.

Cases of Ar and K nonequilibrium relations in biotites in connection with the creation of geological time scale in the absolute chronology. Izv. AN SSSR. Ser. geol. 28 no. 1: 19-45 Ja '63. (MIRA 16:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralologii i geokhimii AN SSSR, Moskva.
(Potassium-argon dating)

KARPINSKAYA, T.B.; SHANIN, L.L.; BORISEVICH, I.V.

Artificial intrusion of argon in mica, olivine, and pyroxene.
Izv. AN SSSR. Ser.geol. 30 no.11:14-16 N '65.

(MIRA 18:12)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralologii i geokhimi AN SSSR, Moskva. Submitted July 15, 1965.

DOKLADY, N. A.

Issledovaniya vosouzhdennykh sostoyaniy molekul v parakh s pomoshch'yu
universal'nogo sootnosheniya mezhdu spektrami fluorestsentsii i pogloshcheniya.

report submitted for the VII European Congress on Molecular Spectroscopy, Budapest,
22-27 Jul 1963

GRUZINSKIY, V.V.; BORISEVICH, N.A.

Studying the excited states of vapors of molecules on the basis
of a universal relation between the fluorescence and absorption
centers. Part 2: Structured spectra. Opt. i spektr. 15 no.4:457-
463 0 '63. (MIRA 16:11)

ACCESSION NR: AP4011506

S/0051/64/016/001/0171/0174

AUTHOR: Borisevich, N.A.; Gruzinskiy, V.V.; Tolkachev, V.A.

TITLE: Concerning anti-Stokes fluorescence of molecules

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 171-174

TOPIC TAGS: molecular fluorescence, anti-Stokes fluorescence, fluorescence excitation, vapor fluorescence, solution fluorescence, fluorescence spectrum, absorption spectrum, 3,6-tetramethyldiaminophthalimide, 3-aminophthalimide

ABSTRACT: It has been demonstrated in some recent papers (I.Ketskemety, J.Dombi and R.Horvai, Acta Phys.Hung.12, No.263, 1960; Ann.Phys.8, 342, 1961; M.N.Alentsev and L.A.Pakhomycheva, Opt.1 spektr.12, 565, 1962; Yu.T.Mazurenko, Ibid.13, 854, 1962) that the decrease in the quantum efficiency of fluorescence of solutions under anti-Stokes excitation is connected with inactive absorption. In the present work it is shown, however, that in the case of thoroughly purified substances no decrease of the fluorescence efficiency of vapors and solutions occurs in the anti-Stokes region. The investigated substances were 3,6-tetramethyldiaminophthalimide and 3-aminophthalimide, which have been investigated earlier (B.S.Neporent and N.A.Borisevich, Opt.1

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ACC.NR: AP4011506

spektr.1,114,1956; DAN SSSR,94,447,1954; Yu.T.Mazurenko.Ibid.13,854,1962). They synthesized and then thoroughly purified by repeated recrystallization and sublimation under vacuum at different temperatures. Adequate measures were taken to avoid contamination of any kind. The solution absorption spectra were recorded by means of an SF-4 spectrophotometer; the absorption of the vapors by means of a set-up assembled about an SF-4 spectrophotometer. The fluorescence spectra were measured by means of a high sensitivity photoelectric set-up. The absorption and fluorescence spectra in the approximate range from 18 000 to 26 000 cm^{-1} are reproduced in figures. In all cases the excitation function F_{λ} is linear. It is inferred that the "apparent" anti-Stokes decrease in fluorescence efficiency reported by other authors was connected with the presence of impurities that affected the weak absorption of the host in this spectral region. "The authors are grateful to T.E.Koloseva for synthesis and purification of the investigated substances." Orig.art.has: 2 figures

ASSOCIATION: none

SUBMITTED: 24May63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 015

OTHER: 001

Cord 2/2

TOLKACHEV, V.A.; BORISEVICH, N.A.

Mean energy of molecules of rarefied fluorescent vapors. Opt.
i spektr. 15 no.3:306-309 S '63. (MIRA 16:10)

AUTHORS: Borisevich, L.N., Ivanov, P.A. 119-58-4-7/15

TITLE: The Electric Viscosimeter EVI -53 (Elektroviskozimetr EVI -53)

PERIODICAL: Priborostroyeniye, 1958, Nr 4, pp. 17-18 (USSR)

ABSTRACT: The work performed by means of this apparatus consists in transforming the amount of viscosity into the phase shift of an auxiliary voltage which is proportional to it and to measure this shift.

In principle the wiring diagram is as follows: The coils of a micromotor are switched on to the feed lines of the system. The coils of the microgenerator are connected by means of a compensation bridge with a subtracting potentiometer. A phase indicator is built into the diagonal of the bridge; its rectified voltage with respect to amount and sign depends upon the phase shift between the voltages U_d - grid voltage at the rectifier triodes - and U_1, U_2 - anode voltages.

This device offers the following advantages:

Card 1/2

The Electric Viscosimeter EVI -53

119-58-4-7/15

- 1.) Measuring takes only 5 - 6 s.
 - 2.) An automatic recording device can easily be connected for investigations in series.
 - 3.) The device can easily be adjusted for remote measurement.
 - 4.) The error limits in all measuring ranges are about + 1%.
- There are 2 figures, and 1 Soviet reference.

Card 2/2

BORISEVICH, M.N.

U-4

USSR/General Problems of Pathology. Tumors

Abs Jour : Ref Zhur - Biol., No 5, 1958, 23042

Author : Dovgyallo, G.Kh., Borisevich, M.N.

Inst : -

Title : The Treatment of Patients with Chronic Leukemias with Radioactive Phosphorus.

Orig Pub : Zdravookhr. Belorussii, 1956, No 12, 20-23

Abstract : Patients with chronic leukemias were treated with P^{32} which was administered as sodium phosphate (1.5-2 mcurie per administration followed by 5-7 day intervals; the total dose was 9-11.5 mcurie). A good therapeutic effect was obtained in the treatment of patients with chronic myeloid leukemia (positive results were obtained in 8 out of 10 patients) with a decrease in the size of the spleen, improvement of the general condition, and decreases in the total number of WBC and in the

Card 1/2

General Problems of Pathology. Tumors

Abs Jour : Ref Zhur - Biol., No 5, 1958, 23042

U-4

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000206320014-3"

multiple myeloid forms of the myeloid series.
Headache and nausea were noted in two of the patients.

Card 2/2

FILIPSON, Ye.; BORISEVICH, N.; KALIGOZHIN, M.

Production of national varieties of horse-meat sausages and
smoked products. Mias. ind. SSSR 32 no.3:23-24 '61.

(MIRA 14:7)

1. Kazakhskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta myasnoy promyshlennosti (for Filipson, Borisevich).
2. Semipalatinskiy myasokombinat (for Kaligozhin).
(Kazakhstan--Horse meat)

BORISEVICH, N. A.

USSR/Physics - Spectral analysis

Card 1/1 Pub. 43 - 16/62

Authors : Neporent, B. S.; Borisevich, N. A.; Klochkov, V. P. and Motovilov, O. A.

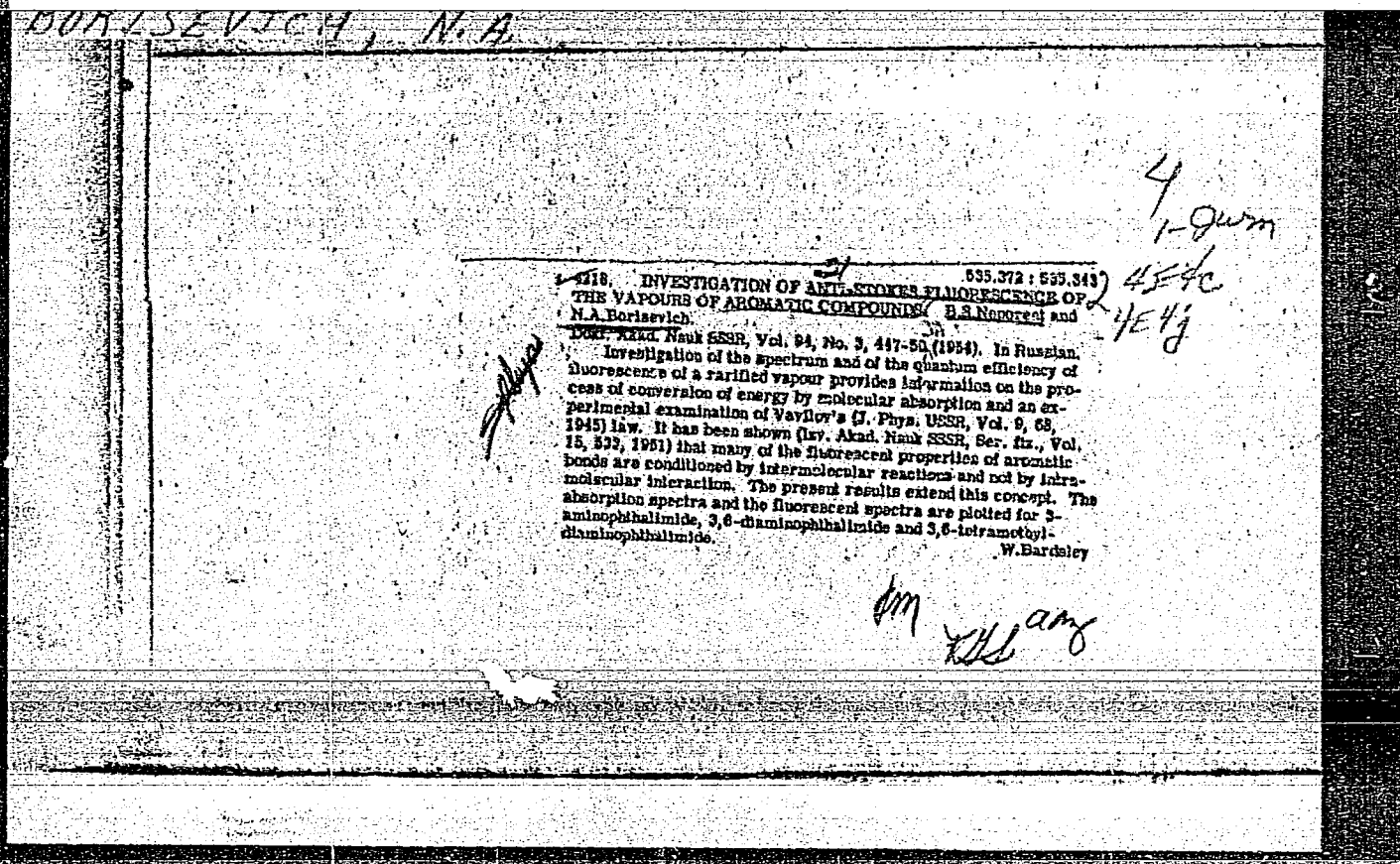
Title : Effect of surrounding medium and supply of oscillation energy of molecules on continuous spectra of organ. compounds

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 674-675, Nov-Dec 1954

Abstract : Investigation was conducted to determine the changes in spectra caused by the addition of a foreign gas or vapor to the vapors of the substance investigated. The molecules of 3-animophthalimide and 3,6-tetramethyl-diaminophthalimide were analyzed to establish the effect of the oscillation energy supply on the form of their spectra. Results showed that the addition of foreign matter effect only the position of the electron levels of the molecules. The intermolecular reactions causing displacement of the levels are determined by dispersion forces. Three USSR references (1951 and 1953). Table; graph.

Institution :

Submitted :



USSR/Physics - Fluorescence

Card 1/1 Pub. 22 - 8/56

Authors : Borisevich, N. A.

Title : Effect of foreign gases on the exhibition of fluorescence by vapors of aromatic compounds

Periodical : Dok. AN SSSR 99/5, 695-698, Dec 11, 1954

Abstract : Effect of foreign gases, such as H_2 , N_2 , NH_3 and C_5H_{12} , on the exhibition of fluorescence of vapors of aromatic compounds was studied. Substituted phthalimides were chosen for the aromatic compounds and the method of comparisons was used for determining the intensity of fluorescence. The relative fluorescence, i. e., a ratio of the intensity of fluorescence to the intensity of excited light, was also determined with the help of an electro-photo-spectrometer. Results are presented in the form of graph-diagrams. Six USSR references (1936-1954). Graphs.

Institution : ...

Presented by: Academician A. N. Terenin, May 10, 1954

Borisevich, N.A.

USSR/ Physical Chemistry - Molecule. Chemical Bond

B-4

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7191

Author : Neporent, B.S. and Borisevich, N.A.

Title : Spectra and Yield of Anti-Stokes and Stokes Fluorescence of Vapors of Aromatic Compounds

Orig Pub : Optika i spektroskopiya, 1956, Vol 1, No 2, 143-154

Abstract : The spectrum and the absolute value of the fluorescence quantum yield have been determined for vapors and solutions of the derivatives of phthalinide: 3-amino-, 3,6-diamino-, 3,6-tetramethyldiamino-, 3-methylamino-, 3-acetamido-6-dimethylamino-, and 3-dimethylamino-6-amino as a function of the wavelength of the exciting light, the temperature, and the vapor pressure. In the case of vapors a decrease in quantum yield is observed for shifts both in the Stokes and in the anti-Stokes region. The first of these phenomena is explained by

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APPROVED FOR RELEASE: 06/09/2000

USSR/ Physical Chemistry - Molecule. Chemical Bond

CIA-RDP86-00513R000206320014-3"

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7191

the increase in the probability of a non-radiating transition as the magnitude of the exciting light quantum increases (Zh. fiz. khimii, 1947, Vol 21, 1111), while the second is a consequence of Vavilov's law on the necessary decrease of the quantum yield in the anti-Stokes region. Investigation of the duration of the luminescence and of the dependence of the quantum yield on the temperature has shown that anti-Stokes fluorescence is produced primarily by molecules rich in vibrational energy in the lowest electronic state; emission is primarily due to excited molecules which have small reserves of vibrational energy. It has been established that changes in the quantum yield are accompanied by certain changes in the fluorescence spectra. In some cases the fluorescence quantum yield of the vapor is higher than that of the corresponding solution.

Card 2/2

- 20 -

USSR / Optics

Borisevich, N.A.

K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10403

Author : Borisevich, N.A., Neporent, B.S.

Inst : Not Given

Title : Effect of Extraneous Gases on Spectra and Fluorescence Yield of Vapors of Aromatic Compounds.

Orig Pub: Optika i spektroskopiya, 1956, 1, No 4, 536-545

Abstract: A study was made of the dependence of spectra of fluorescence yield of vapors of 3,6-tetramethyldiaminophthalimide, 3-dimethylamino-6-aminophthalimide, 3-aminophthalimide, and 3,6-diaminophthalimide on the pressure of extraneous gases at various temperatures. It is established that the effect of extraneous gases is not restricted to reinforcement of the fluorescence as a result of stabilization of the excited molecules, which takes place only upon excitation by large quanta. During excitation by small quanta one observes the reverse phenomenon, weakening of fluorescence.

Card : 1/2

USSR / Optics

K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10403

It is shown that the excitation frequency, at which no changes occur in the fluorescence yield in the presence of extraneous gases (called the inversion frequency) coincides with the frequency of the electron transition. The observed phenomena of the reinforcement and weakening of the fluorescence are explained by the transfer of energy from the excited molecule to the molecule of the extraneous gas or vice versa. An estimate is made of the average amount of energy, transferred upon collision. Comparison of the values of the fluorescence yield of solutions and vapors shows that the action of the solvent on the fluorescing ability of the dissolved substance is not restricted to a rapid establishment of thermal equilibrium in the system, which is of universal character, but exerts also a specific influence.

A method is proposed for separate investigation of the specific and universal action of the solvent.

Card : 2/2

NEPOREKT, B.S.; BORISEVICH, N.A.

Spectra and emission of Stokes and anti-Stokes fluorescence of
aromatic compounds. Izv. AN SSSR Ser.fiz. 20 no.4:476 Ap'56.
(Luminescence) (Fluorescence) (MIRA 10:1)

BORISVICH, N.A.; NEPORENT, B.S.

Influence of gaseous impurities on the spectra and emission of
fluorescence of vapors of aromatic compounds. Izv.AN SSSR Ser.fiz.20
no.4:477 Ap '56. (MLRA 10:1)
(Luminescence) (fluorescence)

BORISEVICH, N.A.; KHVASHCHEVSKAYA, Ya.S.; LAPTEVICH, I.F.

Dispersion filters for the infrared spectral region. Trudy Inst.
fiz. i mat. AN BSSR no.2:214-223 ' 57. (MIRA 12:1)
(Light filters) (Infrared rays)

BORISEVICH, N. A.

24(7) 24(0)
BRIEF

Stepanov, B. I., Academician AS
Belorusskaya SSR

207/50-59-1-9/51

2200

Investigations by Belorussian Scientists in the Field of
Spectroscopy and Luminescence (Sobremennyye ustoychivyye
spektroskopicheskoye i lyuminitsentnoye)

2200/2201

Vestnik Akademii nauk SSSR, 1959, No 1, pp 66-76 (USSR)

2200/2202

These investigations are being carried out at the Institute
fiziko-khimicheskoy optiki (Institute of Physics and Mathematics
of the Belorussian Academy of Sciences) under the direction
of B. I. Stepanov, A. B. Serchenko, M. A. Iol'yashovich,
Academician AS SSSR, and P. I. Pavlov, Corresponding Member,
Academy of Sciences, SSSR. In the field of theoretical spectro-
scopy, the investigations by B. A. Apanasovich, B. I. Stepanov
and others are noted. Further, the following in-
vestigations are noted:

B. I. Stepanov, B. A. Apanasovich used the general
principles of spectroscopy of negative currents in their
investigations. On the basis of experimental data A. M. Sazonov obtained
important results in the determination of genuine values of
optical characteristics of the substance examined. Methods of
B. A. Stepanov, B. V. Ivanov examined cellulosic substances
absorption with large overlapping of absorption and lumines-
cence spectra.

B. A. Stepanov succeeded in obtaining fundamental results in
the examination of luminescence of phosphor vapors. He also
showed that the efficiency of quenching solutions may be much
less than one, under the direction of A. V. Serchenko, examine
the influence of the solvent on the yield of fluorescence as
well as the absorption and emission spectra.

B. A. Stepanov, B. V. Ivanov, A. M. Sazonov examined the
luminescence polarization of many combined materials. At
the same time they designed an improved apparatus for the
measurement of rare-earth complexes.

A. B. Serchenko, V. V. Kuznetsov worked in the field of lum-
inescence of rare-earth complexes.

V. A. Milgromich examined the properties of phosphorescence.
The examination of optical properties of chlorophyll and
related compounds are noted. Academician AS SSSR (Institute of
Biology, Academy of Sciences, Belorusskaya SSR).

B. I. Stepanov, B. A. Apanasovich, B. V. Ivanov examined the
luminescence spectra of a live leaf.

B. I. Stepanov, B. A. Apanasovich, B. V. Ivanov examined the
luminescence spectra of a live leaf.

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Card 3/3

Card 4/3

- 7(3), 5(4), 24(7)

SOV/48-23-10-18/39

AUTHORS: ~~Borisovich, N. A.~~, Makarevich, N. I., Prima, A. M.,
Bardyshev, I. I., Chermes, Ye. A.

TITLE: Identification of Resin Acids by Means of Their Infrared Spectra

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 10, pp 1219-1221 (USSR)

ABSTRACT: Coniferous resins, which essentially contain terpene hydrocarbons and resin acids, have many industrial uses. As the chemical analysis and the separation of the individual acids causes considerable difficulties in a mixture of pure resin acids, the infrared spectroscopic analysis of these substances is of particularly great importance. Hitherto, however, not many resin acids have been investigated in this way. In the present paper the authors give the results obtained by investigating four such resin acids, the structural formulas are mentioned: abietic acid (I), levopimaric acid (II), dextropimaric acid (III), and dehydroabietic acid (IV). Solutions of these acids in CCl₄ as well as pressed samples of acid +
Card 1/2 potassium bromide were investigated by means of a IKS-11-type

SOV/48-23-10-18/39

Identification of Resin Acids by Means of Their Infrared Spectra

spectrometer. The spectra of the solution and the pressed sample show practically no difference whatever. The spectra obtained are shown by four diagrams. Their particular features are discussed. Within the range of the valence oscillations of the groups CH, CH₂, and CH₃ the spectra of I, II, and IV are very similar, and only III deviates, which is due to the existence of the group -CH=CH₂. The frequency of the bands corresponding to the groups C=O and COH (1685 and 1282 cm⁻¹) depends only to a small extent on the structure of the remaining acid molecule; the intensity of these bands, however, differs considerably according to the individual acids. Within the range of the double bond C=C a band was found at 1544 cm⁻¹ in I, II, and IV, and one was found in III at 1631 cm⁻¹ as well as one at 1409 cm⁻¹. In IV the band (1502 cm⁻¹), which is characteristic of the benzene ring, was found. A number of intense bands was also found in the range 800-1100 cm⁻¹: 893 (I), 1007 and 1024 (II), 821 (IV) and 905 cm⁻¹(III). There are 1 figure and 1 Soviet reference.

Card 2/2

BORISEVICH, N.A., red.; TIMOFEYEV, L., red.; SIDERKO, N., tekhn.red.

[Methods of fluorescence analysis; proceedings of the 8th
Conference on Luminescence (October 19-24, 1959)] Metody
lyuminescentnogo analiza; materialy. Minsk, Izd-vo Akad.
nauk BSSR, 1960. 147 p. (MIRA 13:11)

1. Soveshchaniye po lyuminesentsii, 8th, 1959.
(Fluorescence)

BORISEVICH, M.A.; GRUZINSKIY, V.V.

Determining temperatures of excited molecules of vapors by
Stepnov's universal ratio. Dokl. AN BSSR 4 no.9:380-383 S '60.
(MIRA 13:9)

1. Institut fiziki AN BSSR. Predst. akad. AN BSSR B.I. Stepanovym.
(Vapors)

BOAISLVICH, M.A.; PETROVICH, P.I.; ZALESSKAYA, G.A.

Infrared spectra of n-xylene derivatives. Dokl. AN BSSR 4 no.12:
510-513 D '60. (MIRA 14:2)

1. Institut fiziki AN BSSR i Nauchno-issledovatel'skiy institut
organicheskikh poluproduktov i krasiteley im. Voroshilova.
(Xylene--Spectra)

BORISEVICH, N.A.; TOLKACHEV, V.A.

Temperature dependence of the fluorescence yield of vapors of
complex molecules. Izv.AN SSSR.Ser.fiz. 24 no.5:521-524
My '60. (MIRA 13:5)

1. Institut fiziki AN BSSR.
(Fluorescence) (Vapors--Optical properties)

BORISEVICH, N.A.; GRUZINSEIY, V.V.

Electron spectra of anthraquinone vapors. Izv.AN SSSR.Ser.fiz.
24 no.5:545-548 My '60. (MIRA 13:5)

1. Institut fiziki AN BSSR.
(Anthraquinone--Optical properties)

BORISEVICH, N.A. [Barysevich, M.A.]

Fluorescence of a pair of complex molecules. Vestsi AN BSSR.
Ser. fiz.-tekh. nav. no.3:44-53 '62. (MIRA 14:10)
(Fluorescences)
(Molecules)

BORISEVICH, N.A.; KHOVRATOVICH, N.N.

Investigation of the intermolecular interactions of phthalimides
with the aid of their infrared spectra. Opt.i spektr. 10 no.5:
589-594 My '61. (MIRA 14:8)

(Phthalimides--Spectra)

S/053/60/071/01/04/011
B006/B011

AUTHORS: Borisevich, N. A., Yel'yashevich, M. A., Stepanov, B. I.

TITLE: Eighth All-Union Conference on Luminescence ✓

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 71, No. 1, pp. 131-136

TEXT: This Conference was held at Minsk from October 19 to 24, 1959. It had been convened by the Nauchnyy sovet po lyuminestsentsii AN SSSR (Scientific Council for Luminescence) of the AS USSR) jointly with the Institut fiziki AN BSSR (Institute of Physics of the AS BSSR) and the Belorusskiy gosudarstvennyy universitet (Belorussian State University). The Conference was attended by 300 delegates, among them 200 from Moscow, Leningrad, Kiyev, Sverdlovsk, Yerevan, Tartu, Poltava, Saratov, Chita, and other centers of the Soviet Union. More than 100 lectures were delivered. Lecturers were A. N. Terenin and V. L. Yermolayev, Leningrad, (intra-molecular energy transfer); V. L. Yermolayev, I. P. Kotlyar, and K. K. Svyatashev (internal conversion from the fluorescence singlet level on the phosphorescence triplet level in naphthalene derivatives); A. N. Terenin and A. V. Shabl' (discovery of phototransport of proton); L. G. ✓

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Pikulik, Minsk (temperature dependence of electron spectra of complex molecules in solution); L. G. Pikulik and A. N. Sevchenko (temperature dependence of quantum yield of fluorescence of phthalimides in high-boiling solvents); V. V. Zelinskiy, V. A. Borgman, I. A. Zhmyreva, V. P. Kolobkov, and I. I. Reznikova, Leningrad (luminescence characteristics of complex molecules); V. V. Zelinskiy, I. A. Zhmyreva, V. P. Kolobkov, A. S. Kotemirovskiy, and I. I. Reznikova (influence of solvents on the spectra of complex organic molecules); N. G. Bakhshiyev, Leningrad spoke on the same subject. Further lectures were delivered by Ye. I. Bozhevol'nov, Moscow (investigation of fluorescence properties of organic molecules); B. Ya. Sveshnikov and P. I. Kudryashov, Leningrad (concentration depolarization of the fluorescence of solvents); G. P. Gurinovich, A. M. Sarzhevskiy, and A. N. Sevchenko, Minsk (investigation of the extreme polarization degree of the luminescence of complicated molecules in methyl methacrylate); B. A. Zadorozhnyy and Yu. V. Naboykin, Moscow (investigation of the luminescence of over 20 systems with intramolecular hydrogen bonds); again these authors with B. G. Distanov, L. A. Ogurtsova, L. M. Podgornaya, and V. I. Tishchenko (investigation of the luminescence of pyrazoline derivatives); L. D. Derkacheva, Moscow (change

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in the fluorescence of naphthalene in dependence on the concentration of hydrogen ions); L. V. Levshin and V. A. Bocharova, Moscow (investigation of concentration effects in solutions of different organic compounds); G. M. Kislyak, Poltava (phosphorescence of certain solvents and their influence on the absorption spectra of organic phosphors); L. V. Volod'ko, A. N. Sevchenko, and D. S. Umreyko, Minsk (luminescence of uranyl compounds); T. I. Kobyshev, Leningrad (properties of luminescent uranyl ions in the adsorbed state); P. A. Apanasevich, Minsk (quantum electrodynamic method of computing the light absorption and -emission by matter); P. A. Apanasevich and G. S. Kruglik, Minsk (angular distribution of resonance luminosity of vapors); V. P. Gribkovskiy and B. I. Stepanov, Minsk (classical and quantum-theoretical methods of calculating optical properties of a harmonic oscillator); B. I. Stepanov and A. M. Samson, Minsk (influence of secondary processes of light absorption and -emission on the characteristic of resonance luminosity); A. M. Samson, Minsk (method of calculating secondary effects in the luminescence of matter); V. M. Agranovich and Yu. V. Konobeyev, Moscow (reabsorption of light in crystals); S. I. Kubarev, Moscow (mathematical treatment of spectroscopic problems); K. K. Rebane and O. I. Sil'd, Tartu (computation of the probabilities of

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vibrational electron transitions of an oscillator in different approximations); Yu. A. Kurskiy and A. S. Selivanenko, Moscow (phenomenological theory of extinction); M. A. Yel'yashevich, Minsk (interaction of electron motion with vibrations in complex molecules); L. P. Kazachenko, Minsk (calculation of absorption- and luminescence band forms of complex molecules without mirror symmetry); M. N. Alentsev and L. A. Pakhomychева, Moscow (experimental verification of the universal relation between the spectra of luminescence and the absorption of complex molecules by B. I. Stepanov); B. S. Neporent and S. O. Mirumyanets, Leningrad (luminescence of vapors of complex molecules); N. A. Borisevich and V. A. Tolkachev, Minsk (temperature dependence of fluorescence yield of vapors of complex molecules); V. P. Klochkov, Leningrad (interaction between aromatic molecules in vapors); N. A. Borisevich and V. V. Gruzinskiy, Minsk (systematic investigation of electron spectra of fluorescent vapors and anthraquinone solutions); E. V. Shpol'skiy, Moscow, jointly with L. A. Klimova (spectroscopic investigation of aromatic hydrocarbons - Shpol'skiy effect); R. I. Personov (absorption- and fluorescence spectra of perylene); A. Ya. Khesina (spectra of perylene derivatives); D. N. Shigorin, R. N. Nurmukhametov, N. S. Dokunikhin,

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and N. A. Shcheglova, Moscow (investigation of luminescence spectra of halogen derivatives of anthraquinone in dependence on the molecular structure); S. G. Bogomolov, R. F. Pemova, and L. P. Kolosova, Sverdlovsk (semiquantitative determination of 3,4-benzpyrene with the Shpol'skiy effect); M. T. Shpak and Ye. F. Sheka (investigation of luminescence of crystalline naphthalene); A. V. Solov'yev (influence of additional impurities on the absorption- and luminescence spectra in molecular crystals); V. L. Broude and V. S. Medvedev (luminescence of anthracene in different solvents); A. N. Faydysh (luminescence and photoconductivity of anthracene crystals in dependence on the excitation conditions); V. I. Gribkov and D. N. Zhevandrov, Moscow (investigation of the sudden polarization change, caused by the introduction of free excitons, at the shortwave edge of the luminescence spectrum in molecular crystals); V. M. Agranovich, Moscow (theory of exciton luminescence); Ch. B. Lushik, N. Ye. Lushik, and K. K. Shvarts, Tartu (investigation of electron vibration processes in solid solutions of mercury-like ions); Ya. Ya. Kirs and A. I. Laysaar, Tartu (influence of high pressures on the spectral characteristics of luminescence spectra of some solid solutions); M. U. Belyy and B. F. Rud'ko, Kiyev (temperature dependence of luminescence- and absorption

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spectra of different frozen solutions); Ye. V. Anufriyeva and A. D. Zaytseva, Leningrad (relationship between the vitrification of polymers and their phosphorescence properties); L. T. Kantardzhyan, E. V. Grigoryan, and S. S. Chikinyan, Yerevan (investigation of different ion forms of uranin and fluorescein at different pH of solution); L. T. Kantardzhyan and V. S. Adamov (an attempt of explaining the nonexponential extinction law of phosphorescence in the presence of secondary effects); Sh. D. Khan-Magometova, N. D. Zhevandrov, and V. I. Gribkov, Moscow (investigation of the intensity drop of photoluminescence after β -irradiation of mixed anthracene and naphthacene crystals); Z. A. Chizhikova, Moscow (experimental determination of the energy yield of radioluminescence of organic substances under the action of γ -radiation); I. M. Rozman, Moscow (investigation of thermoextinction); Yu. V. Naboykin, V. K. Dobrokhotova and V. V. Uglanova, Moscow (scintillation properties and fluorescence spectra of naphthalene-, stilbene, diphenyl- and other single crystals with impurities); T. N. Godnev, R. V. Yefremova, N. P. Ivanov, and L. A. Kravtsov, Minsk (investigation of chlorophyll formation in leaves); A. A. Krasnovskiy and F. F. Litvin, Moscow (investigation of chemoluminescence spectra of chlorophyll and fluorescence spectra and

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afterglow of leaves); G. P. Gurinovich, A. N. Savchenko, and K. N. Solov'yev, Minsk (investigation of the polarization of fluorescence of porphyrins and phthalocyanides); V. A. Fedorov and S. I. Freyvert, Leningrad (on a two-beam photoelectric fluorimeter for the quantitative determination of uranium; type: LYuF-57); K. P. Stolyarov and N. N. Grigor'yev, Leningrad (method for the qualitative microchemical analysis with identification of the ions after their formation of chemical compounds); D. P. Shcherbov, R. N. Korzheva, and A. I. Ponomarenko, Alma-Ata (investigation of the fluorescence reaction of boron with benzoyl, method of boron determination); D. P. Shcherbov and R. N. Korzheva, Alma-Ata (fluorescence excitation and problems of fluorometry); T. V. Gurkina and A. V. Drobachenko, Alma-Ata (boron determination with a sensitive fluorometer - limit: 0.06 $\mu\text{g/ml}$); Ye. A. Bozhevol'nov and G. V. Serebryakova, Moscow (investigations with the "Lyumomagnezon IRYeA"); Ye. A. Bozhevol'nov and V. M. Yanishevskaya (luminescence method of aluminum determination); V. K. Matveyev, Moscow (industrial synthesis of a red-glowing luminophosphor); V. V. Patrikeyev and V. K. Matveyev, Moscow (a new method of marking sand with luminophores); N. S. Borodin, Ye. A. Galashin, N. Ya. Semyakina, and V. N. Silayeva, Moscow (phosphorescence of

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distribution zones of colorless substances on chromatographic paper at low temperatures); I. N. Yermolenko, M. Z. Gavrilov, and L. F. Gladchenko, Minsk (relationship between the luminescence intensity of cellulose and the quantity of adsorbed water); V. N. Alekseyev (luminescence-bitumen investigations); M. M. Yudilevich, Rostov-Don (semiautomatic instrument in determinations by luminescence); A. N. Faydysh, L. Ye. Chechik, A. D. Chugay, and M. I. Przhebyl'skiy, Kiyev (control of rubber quality by means of the luminescence method); M. L. Berman, Tashkent (investigation of liquid diffusion in rubber with the luminescence method); V. N. Provorov and V. D. Zaytseva, Moscow (investigation of luminescence properties of rubber and its ingredients in the production on caoutchouc basis); Ye. M. Brumberg, M. N. Meysel', and A. V. Gutkina, Leningrad, Moscow (investigation by luminescence of cells of living organs); V. Kh. Anestiadi, Kishinev (luminescence-microscopic analysis of earcinoma); M. N. Meysel' and L. V. Mirol'yubova, Leningrad (luminescence-microscopic investigation of the structure of bacterial cells); A. P. Kononenko and K. N. Ishchenko-Linnik, Khar'kov (luminescence-microscopic investigation of bacteria); Yu. I. Rubinshteyn, Moscow (luminescence-microscopic investigation of the morphology and structure of some microscopic fungi); ✓

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S. M. Klimenko and N. B. Azadova, Moscow (investigation of the distribution of the antigen of flue virus in a tissue culture by means of fluorescent antibodies at different stages of infection); F. M. Kirillova, Moscow (discovery of the polio virus in tissue cultures by the method of fluorescent antibodies); Ye. A. Kabanova and Ye. N. Levina (luminescence-serological methods of detecting pathogenous microorganisms); T. A. Kalitina, Moscow (production of a fluorescent antitoxin serum and identification of the serum of microbes *Cl. botulinum* by its aid); V. A. Blagoveshchenskiy and A. I. Glubokina (production of antisera marked with luminescent dyes); S. N. Braynes, S. V. Konev, and G. P. Golubeva (investigation of the spectra of excitation of ultraviolet fluorescence of blood plasma in man and animals); Sh. D. Khan-Magometova, A. V. Gutkina, and M. N. Meysel, Moscow (UV-fluorescence spectra of animal tissue, and action exerted by X-radiation on it); S. I. Vasilov and V. I. Nikolayev, Chita (determination of the concentration of cordial glucosides in aqueous solutions by means of the luminescence method); Yu. A. Vladimirov, Moscow (systematic study of luminescence spectra, of afterglow spectra, and afterglow excitation spectra of aromatic amino acids and proteins); S. V. Konev and I. I. Kozulin, Moscow (quantitative

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protein determination in milk by comparing the protein fluorescence intensity in the milk with the fluorescence of standards); V. V. Gruzinskiy, G. I. Margaylik, and A. V. Yermolovich, Minsk (determination of the vitality of the seeds of tree species by the luminescence method.



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L 18088-63

ACCESSION NR: AT3002189 Pc-4/Pr-4 RM/WW/MAY S/2941/63/001/000/0016/0021

AUTHORS: Tolkachev, V. A.; Borisevich, N. A.

70

TITLE: Fluorescence yield of complex molecules in vapor phase

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminestsentsiya. Moscow. Izd-vo AN SSSR, 1963, 16-21

TOPIC TAGS: fluorescence, vapor, transition probability, activation energy

ABSTRACT: In the first part of the study the authors analyzed the temperature dependence of fluorescence yield of complex molecules in their vapor phase. Three arbitrary phthalamides and an aminoatroquinine are considered. Thermal quenching for fluorescence is shown to be weak for excitation in the second absorption band. Also, the rate of decrease in yield with temperature (in the same band) is found to be independent of the frequency of the excitation radiation. In the second part the activation energy is determined for radiationless transitions of the three complex molecules. For 3,6-tetramethyl diamino and 3-dimethylamino-6-aminophthalamide molecules the activation energies are shown

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ACCESSION NR: AT3002189

to increase with an increase in vibrational temperatures. Orig. art. has: 7
formulas and 7 figures.

ASSOCIATION: none

SUBMITTED: 08May62

DATE ACQ: 19May63

ENCL: 00

SUB CODE: PH

NO REF SOV: 017

OTHER: 002

Card 2/2

L-18734-63 EWT(1)/BDS AFPTC/ASD/IJP(G)

ACCESSION NR: AT3002190

S/2941/63/001/000/0022/0028

AUTHORS: Tolkachev, V. A.; Borisevich, N. A.

TITLE: Mean energy of excited vapor molecules and frequency of absorbed radiation 53

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminesentsiya. Moscow, Izd-vo AN SSSR, 1963, 22-28

TOPIC TAGS: vapor, absorption, mean energy, transition, radiation

ABSTRACT: The relation between the mean energy of excited vapor molecules and the frequency of absorbed radiation has been obtained. This is given in equation (1):

$$\Delta E' = \bar{E}_1' - \bar{E} = h\nu$$

where h = Planck's constant; ν = frequency; $\bar{E}$ = average energy of molecule in ground state; $\bar{E}_1'$ = mean energy of excited vapor molecule; $\Delta E' = k^{3/4} \ln x_\nu$, with T = temperature, k = Boltzmann constant, x_ν = absorption coefficient. $\bar{E}_1'$ is given by equation (2):

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$$\bar{E}_1 = \frac{\int (E + h\nu) \cdot B(E, \nu) \cdot p(E) \cdot dE}{\int B(E, \nu) \cdot p(E) \cdot dE} = \frac{E \cdot B(E, \nu)}{B(E, \nu)} + h\nu.$$

where $B(E, \nu)$ = Einstein coefficient. Results are tabulated and plotted for three types of molecules: 3-aminophthalamide; 3-6-tetramethyldiaminophthalamide; and β -naphthalamine. Experimentally it is found that the effective excitation energy in the Stokes region changes linearly with frequency of excitation radiation and remains constant through transition into the anti-Stokes excitation. Orig. art. has: 15 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 16Jun62

DATE ACQ: 19May63

ENCL: 00

SUB CODE: PH

NO REF SOV: 017

OTHER: 000

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S/250/63/007/002/004/008
A059/A126

AUTHORS: Borisevich, N. A., Tolkachev, V. A.

TITLE: On the quantum yield of fluorescence of vapor molecules

PERIODICAL: Doklady Akademii nauk BSSR, v. 7, no. 2, 1963, 87 - 91

TEXT: The quantum yield of fluorescence can be determined either by measuring under steady conditions the ratio of the number of quanta emitted in unit time to the number of those absorbed in the same time, or by finding the ratio of the number of quanta emitted after excitation has been stopped, to the total number of molecules in the excited state at the moment when excitation is discontinued. These two methods are shown to lead to inconsistent results with regard to the quantum yield of fluorescence of diluted vapors. In general, with diluted vapors, $\gamma_1 \neq \gamma_2$, and the yield γ_1 experimentally found averaged with respect to the distribution $\rho_1^*(E^*)$ should be comparable with the energy $\bar{E}_1^*$ averaged with respect to the same distribution. Only in the case of a relatively strict distribution function or when the probabilities f and d are independent of E^* , it may occur that $\gamma_1 \approx \gamma_2$ and $\bar{E}_1^* \approx \bar{E}_2^*$. We obtain

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On the quantum yield of...

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A059/A126

$$\gamma_1 = \frac{\overline{E}_d^* - \overline{E}_1^*}{\overline{E}_d^* - \overline{E}_f^*} \quad (20)$$

which shows that the quantum yield of vapor fluorescence equals the ratio of the difference between the mean energies of the molecules leaving the excited state without emitting radiation ($\overline{E}_d^*$) and of all molecules leaving the excited state ($\overline{E}_1^*$) to the difference between the mean energies of the molecules leaving the excited state without emitting radiation and of those emitting fluorescence ($\overline{E}_f^*$). Thus, $\gamma_1 = 1$, when $\overline{E}_1^* = \overline{E}_f^*$, and $\gamma_1 = 0$, when $\overline{E}_1^* = \overline{E}_d^*$. Since the fluorescence yield of vapors varies in the range $0 \leq \gamma_1 \leq 1$, either $\overline{E}_d^* \geq \overline{E}_1^* \geq \overline{E}_f^*$ or $\overline{E}_d^* \leq \overline{E}_1^* \leq \overline{E}_f^*$ holds. If a potential barrier exists for the radiationless transitions, the condition $\overline{E}_d^* \geq \overline{E}_1^* \geq \overline{E}_f^*$ should be fulfilled.

ASSOCIATION: Institut fiziki AN BSSR (Institute of Physics, AS BSSR)

PRESENTED: by B. I. Stepanov, academician of the AS BSSR

SUBMITTED: August 11, 1962

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